



DEPARTMENT OF THE NAVY
NAVY ENVIRONMENTAL HEALTH CENTER
620 JOHN PAUL JONES CIRCLE SUITE 1100
PORTSMOUTH VA 23708-2103

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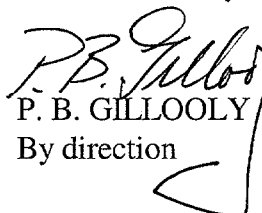
18 JUN 2002

From: Commanding Officer, Navy Environmental Health Center
To: Commanding Officer, Atlantic Division, Naval Facilities Engineering Command
(David Black), 1510 Gilbert Street, Norfolk, VA 23511-2699

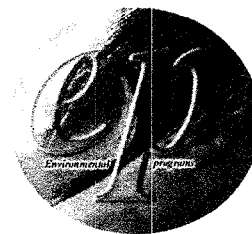
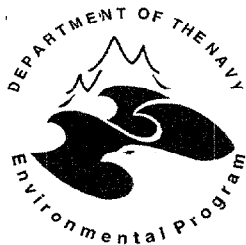
Subj: MEDICAL REVIEW OF DRAFT PRE-FINAL V.3 RECORD OF DECISION
OPERABLE UNIT NO. 6, (SITES 36, 43, 44 AND 54), MARINE CORPS BASE
CAMP LEJEUNE, CAMP LEJEUNE, NC

Ref: (a) Baker Environmental, Inc. Letter of Transmittal S.O. No. 26007-219-0000-
RDOU6 of 26 Apr 02

1. Per reference (a), we have completed a review of the subject document and forward our comments to you as enclosure (1).
2. Please complete and return enclosure (2) as your comments are needed to continually improve our services to you.
3. We are available to discuss the enclosed information by telephone with you and, if you desire, with you and your contractor. If you require additional assistance, please call Mr. Kenneth Gene Astley at (757) 953-0937 or Mr. David McConaughy at (757) 953-0942. The DSN prefix is 377. The e-mail addresses are: astleyg@nehc.med.navy.mil and mcconaughyd@nehc.med.navy.mil.


P. B. GILLOOLY
By direction

Copy to: (w/o Encl (2))
CNO (N-453)
NAVFAC (ENC-KPB)
BUMED (MED-24)
CMC (LFL)
MCB Camp Lejeune (ACS EMD/IRP, Tom Morris)



NAVY ENVIRONMENTAL HEALTH CENTER ENVIRONMENTAL PROGRAMS DIRECTORATE

Record of Decision Review

Location: Jacksonville, North Carolina

Command: Marine Corp Base Camp Lejeune

Work Description: Record of Decision

Document Date: April 2002

Contract No/Delivery Order No: N62470-95-D-6007/0219

EP Document No: 4375

Prepared for: LANTNAVFACENGCOM

Prepared by: CHM2 Hill and Baker Environmental, Inc

Date Received: 25 May 2002

Reviewed by:

Kenneth Gene Astley, (757) 953-0937, astleyg@nehc.med.navy.mil, DSN 377

**MEDICAL REVIEW OF
DRAFT PRE-FINAL V.3 RECORD OF DECISION
OPERABLE UNIT NO. 6 (SITES 36, 43, 44, AND 54)
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA**

General Comments:

1. The document entitled "Draft Pre-Final V.3 Operable Unit No. 6 (Sites 36, 43, 44, and 54) Marine Corp Base Camp Lejeune, North Carolina," was provided to the Navy Environmental Health Center (NAENVIRHLTHCEN) for review on 25 May 2002. CHM2 Hill and Baker Environmental, Inc prepared the report for the Atlantic Division, Naval Facilities Engineering Command.
2. The text states that for Sites 36 and 43 soil remediation will be conducted because sampling results were obtained over Region IX Preliminary Remediation Goals. This policy is too conservative (and expensive) and should be revised.
3. The NEHC comments provided on the Draft Feasibility Study OU No. 6, Sites 36, 43, 44, and 54 MCB Camp Lejeune, Jacksonville, North Carolina also apply.

Review Comments and Recommendations:

1. Page 2-10, Site 36, Section 2.5, "Current Scenario"

Comments:

a. The text states on Page 2-10 that "The levels of arsenic and mercury found in fish tissue and the **maximum** levels of arsenic and lead detected in the crab tissue contributed to these risks. Exposure to the **maximum** concentration of lead in the surface soil and crab tissue for a child receptor also indicates the potential for adverse health effects."

b. An EPA Deputy Administrator memorandum dated 26 February 1992 entitled "Guidance of Risk Characterization for Risk Managers and Risk Assessors" indicates that a single number used to represent the health risk to an individual or population may hamper the risk manager's ability to make an informed decision. Additionally, risk estimates should present both the upper bound reasonable maximum exposure (RME) and average case, or central tendency (CT).

c. The text states on Pages 2-10 and 2-11 that "However, there were potential noncarcinogenic risks (i.e., 1.0) calculated for the child resident from groundwater (5.2, ingestion and dermal contact) and subsurface soil (2.3) exposure. Similarly, there was a noncarcinogenic risk (2.2) calculated for the adult resident from groundwater exposure. These risk values exceeded the risk value of 1.0 for noncarcinogenic effects. The maximum concentration of lead in the subsurface soil for a child receptor indicates the potential for adverse health effects." The text continues to state on Page 11 "Similarly, if

iron were removed from the evaluation, the noncarcinogenic risk from exposure to subsurface soil for the child receptor would decrease to acceptable risk values (i.e., 2.3 to 0.9). As a result, the potential human health risk from exposure to iron in groundwater and subsurface soil is a conservative and unrealistic estimate.” Finally, the text states on Page 11 “the iron concentrations detected in the site soil, however, are within typical concentrations noted in literature values for similar media and MCB, Camp Lejeune.”

Recommendations:

- a. The arithmetic or geometric mean and the upper 95 percent confidence limit of that mean risk estimates should be used to determine the human health risk assessment not the maximum sampling result.
 - b. Iron should not be discussed in the narrative or used in the human health risk assessment because, as stated in the text, “iron is an essential nutrient” and sample concentrations are within soil background levels.
 - c. If the surface soil contamination does not generate an unacceptable risk to humans, further soil remediation is not required.
2. Page 3-3, Site 43, Section 3.2, “Remedial Investigation”
Page 3-4, Site 43, Section 3.3, “Scope and Role of Remedial Action”

Comments:

- a. The text states on Page 3-3 “Based on the human health and ecological RAs [risk assessments] conducted during the RI [remedial investigation], conditions at Site 43 did not pose a risk to human health and the environment. As a result, the only remedial action identified for Site 43 was the “no action” alternative.”
- b. The text states on Page 3-4 “The preferred remedial alternative for soil at Site 43 will address the PAHs [polynuclear aromatic hydrocarbon] exceeding Region IX Preliminary Remediation Goals (PRGs). Figure 3-2 shows the areas of concern for PAHs at Site 43. Excavation and off-site disposal will include removal of all PAHs exceeding Region IX PRGs from the site, disposal in the Base landfill and confirmatory sampling.”
- c. The text concerning the risk to humans at on Pages 3-3 and 3-4 seems to contradict itself. It is unclear why a remedial alternative other than “no action” is being discussed on page 3-4 given that there is no apparent health risk.

Recommendation: Revise the text on page 3-4 to reflect that of page 3-3.

FROM:	(YOUR NAME/COMMAND)
TO:	NAVENVIRHLTHCEN, ENVIRONMENTAL PROGRAMS
FAX:	COM: (757) 444-7261/DSN: 564-7261

MEDICAL/HEALTH COMMENTS - YOUR VIEW

Please help us improve our review process by indicating the extent to which you agree or disagree with the comments we provided your activity.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. "Value added" to IR/BRAC process?	1	2	3	4	5
2. Received in a timely manner?	1	2	3	4	5
3. High level of technical expertise?	1	2	3	4	5
4. Very useful to the RPM?	1	2	3	4	5
5. Contractor incorporated comments?	1	2	3	4	5
6. Easily readable/useful format?	1	2	3	4	5
7. Overall review was of high quality?	1	2	3	4	5
8. NAVENVIRHLTHCEN was easily accessible?	1	2	3	4	5
9. NAVENVIRHLTHCEN input during scoping or workplan development would be "value added"?	1	2	3	4	5
10. Added involvement in IR/BRAC document needed?	1	2	3	4	5

Please return by fax using the box provided at the top of this page. If you have any other comments, please list them below or telephone Mr. David McConaughy, Industrial Hygienist at (757) 462-5557, DSN 253, at any time to discuss your viewpoint. As our customer, your comments and suggestions on how we can improve our services to you are important!